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Application No.: 10/564,763

Docket No.: 4590-479

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1-23 (Canceled).

24. (Currently Amended): A two-part electrical connector, comprising:
a first part including a tongue portion having a base and a tongue extending longitudinally therefrom;

a second part including a socket portion having a base and walls extending therefrom defining a socket for slidably receiving the tongue, the tongue portion and socket portion having locking means to permit releasable mutual engagement, said locking means including a locking member moveable between a first position in which the tongue is held in the socket and a second position in which the tongue is removable from the socket;

a primary coupling element located in the tongue; and

a secondary coupling element located in at least one of the socket walls, which elements provide a contact-less electromagnetic coupling when the tongue is engaged in the socket, wherein the primary and secondary coupling elements are primary and secondary inductors, respectively, and each includes a conductive coil wound around a ferromagnetic core, and the secondary conductive coil is located in the socket base and the secondary inductor core has two elongate arms extending into the socket walls so that when the tongue is engaged in the socket, the primary inductor is located between the two arms.

25. (Previously Presented): The two-part electrical connector according to claim 24, wherein the primary coupling element extends longitudinally adjacent an outer surface of the tongue and the secondary coupling element extends longitudinally adjacent a corresponding inner surface of a socket wall so that in use overlap of the primary and secondary coupling elements permits lateral and/or longitudinal movement of the tongue within the socket while maintaining electromagnetic coupling.

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26. (Canceled).

27. (Canceled).

28. (Currently Amended): The two-part electrical connector according to claim 24 27, wherein the primary inductor coil is located in a rear portion of the tongue and the primary inductor core has two elongate arms extending to a forward portion of the tongue so that when the tongue is engaged in the socket, the primary inductor arms are located between and overlap with the secondary inductor arms.

29. (Currently Amended): The two-part electrical connector according to claim 24 27, wherein at least one of the elongate arms is spaced from the rest of the core to permit independent movement of the elongate arm with respect to the rest of the core whilst in electromagnetic communication with the rest of the core.

30. (Currently Amended): The two-part electrical connector according to claim 24 27, wherein the primary and secondary cores are made from a ferrite material.

31. (Previously Presented): The two-part electrical connector according to claim 30, wherein the primary core and the secondary core are made from ferrite particles dispersed in a resilient matrix.

32. (Currently Amended): ~~The~~ A two-part electrical connector according to claim 24, comprising:

a first part being a tongue portion having a base and a tongue extending longitudinally therefrom;

a second part being a socket portion having a base and walls extending therefrom defining a socket for slidably receiving the tongue, the tongue portion and socket portion having locking means to permit releasable mutual engagement, said locking means including a locking member moveable between a first position in which the tongue is held in the socket and a second position in which the tongue is removable from the socket;

a primary coupling element located in the tongue; and

a secondary coupling element located in at least one of the socket walls, which elements provide a contact-less electromagnetic coupling when the tongue is engaged in the socket.

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wherein each of the primary and secondary elements is one half of a capacitor structure so that when the tongue is engaged in the socket a capacitor structure is formed to enable capacitive coupling.

33. (Previously Presented): The two-part electrical connector according to claim 32, wherein each of the primary and secondary coupling elements is a capacitor plate such that when the tongue is engaged in the socket there is overlap of the primary and secondary capacitor plates.

34. (Currently Amended): ~~The A~~ two-part electrical connector according to claim 24, comprising:

a first part being a tongue portion having a base and a tongue extending longitudinally therefrom;

a second part being a socket portion having a base and walls extending therefrom defining a socket for slidably receiving the tongue, the tongue portion and socket portion having locking means to permit releasable mutual engagement, said locking means including a locking member moveable between a first position in which the tongue is held in the socket and a second position in which the tongue is removable from the socket;

a primary coupling element located in the tongue; and

a secondary coupling element located in at least one of the socket walls, which elements provide a contact-less electromagnetic coupling when the tongue is engaged in the socket, wherein at least one of the socket walls contains an aperture adjacent the socket base so that dirt and dust can escape from the socket when the tongue is engaged in the socket.

35. (Currently Amended): ~~The A~~ two-part electrical connector according to claim 24, comprising:

a first part being a tongue portion having a base and a tongue extending longitudinally therefrom;

a second part being a socket portion having a base and walls extending therefrom defining a socket for slidably receiving the tongue, the tongue portion and socket portion having locking means to permit releasable mutual engagement, said locking means including a locking member moveable between a first position in which the tongue is held in the socket and a second position in which the tongue is removable from the socket;

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a primary coupling element located in the tongue; and
a secondary coupling element located in at least one of the socket walls, which elements provide a contact-less electromagnetic coupling when the tongue is engaged in the socket, wherein the socket portion includes two baffles located within the socket defining a guide channel for guiding the tongue, the baffles extending from the mouth end of the socket to a point spaced from the base of the socket portion so that dirt and debris pushed into the guide channel by the tongue can escape from the guide channel through the space between the socket base and the baffles.

36. (Currently Amended): The two-part electrical connector according to claim 34, wherein the locking means includes a resilient latch and a detent for cooperating with the latch.

37. (Previously Presented): The two-part electrical connector according to claim 36, wherein the resilient latch is located on the tongue and the detent is located in a corresponding socket wall.

38. (Previously Presented): The two-part electrical connector according to claim 36, wherein the tongue portion has two resilient latches spaced laterally from and located on either side of the tongue and the socket portion has two detents located in corresponding socket walls.

39. (Currently Amended): Apparatus for transmitting electrical signals between electrical equipment, including a two-part electrical connector ~~according to claim 24 and comprising:~~

a first part being a tongue portion having a base and a tongue extending longitudinally therefrom;

a second part being a socket portion having a base and walls extending therefrom defining a socket for slidably receiving the tongue, the tongue portion and socket portion having locking means to permit releasable mutual engagement, said locking means including a locking member moveable between a first position in which the tongue is held in the socket and a second position in which the tongue is removable from the socket;

a primary coupling element located in the tongue; and

a secondary coupling element located in at least one of the socket walls, which elements provide a contact-less electromagnetic coupling when the tongue is engaged in the socket,

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wherein the apparatus further comprises a webbing strap connected to at least one part of the connector, wherein the webbing strap included electrical wires which are electrically connected to a coupling element in the connector.

40. (Currently Amended): A tongue portion for use in a two-part electrical connector according to claim 34-24, wherein the tongue portion includes a base and a tongue extending longitudinally therefrom, an electromagnetic coupling element located within the tongue, and locking means for co-operating with locking means of the socket portion for releasably holding the tongue in the socket.

41. (Currently Amended): A socket portion for use in a two-part electrical connector according to claim 34-24, wherein the socket portion includes a base and socket walls extending longitudinally therefrom to define a socket for slidably receiving a tongue, an electromagnetic coupling element located within at least one of the socket walls and locking means for co-operating with locking means of the tongue portion for releasably holding the tongue in the socket.

42. (Currently Amended): Use of a two-part electrical connector according to claim 24-41 to transmit electrical signals between electrical equipment.

43. (Currently Amended): A method of modulating the current characteristics in one or both of the primary and secondary coupling elements in a two-part electrical connector ~~according to claim 24~~ said connector comprising:

a first part being a tongue portion having a base and a tongue extending longitudinally therefrom;

a second part being a socket portion having a base and walls extending therefrom defining a socket for slidably receiving the tongue, the tongue portion and socket portion having locking means to permit releasable mutual engagement, said locking means including a locking member moveable between a first position in which the tongue is held in the socket and a second position in which the tongue is removable from the socket;

a primary coupling element located in the tongue; and

a secondary coupling element located in at least one of the socket walls, which elements provide a contact-less electromagnetic coupling when the tongue is engaged in the socket, said method including the steps of:

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detecting the engagement status of the connector and adjusting the current characteristics in response to the detected status.

44. (Previously Presented): The method according to claim 43, wherein the engagement status is detected by detecting the change in impedance when the two-part connector is connected or disconnected.

45. (Previously Presented): The method according to claim 43, wherein the engagement status is detected by detecting the change in phase between current and voltage when the two-part connector is connected or disconnected.

46. (New): The two-part electrical connector according to claim 32, wherein the primary coupling element extends longitudinally adjacent an outer surface of the tongue and the secondary coupling element extends longitudinally adjacent a corresponding inner surface of a socket wall so that in use overlap of the primary and secondary coupling elements permits lateral and/or longitudinal movement of the tongue within the socket whilst maintaining electromagnetic coupling.

47. (New): Use of a two-part electrical connector according to claim 32 to transmit electrical signals between electrical equipment.